

EUV E OBSERVATIONS OF THE MOON; G. R. Gladstone, J. S. McDonald, and W. T. Boyd, Center for Extreme Ultraviolet Astrophysics, University of California at Berkeley, Berkeley, CA 94720

During its all-sky survey, the Extreme Ultraviolet Explorer (*EUV E*) satellite observed the Moon several times at first and last quarters, and once near the Dec. 10, 1992 lunar eclipse. We present here a preliminary reduction and analysis of this data, in the form of EUV images of the Moon and derived albedos. Extreme ultraviolet observations of the Moon are of considerable interest, since it has been speculated that lunar EUV emissions are primarily due to L- and M-shell X-ray fluorescence and may provide a useful diagnostic of surface elemental abundances [1].

The *EUV E* science payload consists of four instruments: three scanning telescopes and a deep survey and spectrometer telescope. The primary goal of *EUV E* is to carry out an all-sky survey over most of the EUV band ($< 911 \text{ \AA}$) using photometers on the three scanning telescopes [2]. The scanning telescope photometers cover four bandpasses in the EUV, using filters made of Lexan/Boron, Aluminum/Carbon, Aluminum/Titanium/Antimony (a.k.a. "Dagwood"), and Tin for extreme ultraviolet sensitivity. The central wavelengths for the Lexan/B, Al/C, Dagwood, and Sn filters, weighted by a typical solar EUV spectrum, are 146, 230, 478 and 590 \AA , and the corresponding full-widths at half maximum are 106, 138, 190, and 74 \AA , respectively.

The initial results for a single scan of the first-quarter Moon suggest EUV albedos of less than 1%. The preliminary albedo for the tin photometer is $\sim 0.5\%$, more than ten times smaller than a measurement made in 1973 by a 584 \AA photometer on the *Mariner 10* spacecraft [3]. We are currently investigating possible sources for the discrepancy between the two measurements. Images of the first quarter, last quarter, and nearly-full Moon will be presented.

REFERENCES: [1] Edwards B. C., Priedhorsky W. C., and Smith B. W. (1991) *GRL*, 18, 2161. [2] Bowyer S. and Malina R. F. (1991) In *Extreme Ultraviolet Astronomy*, ed. R. F. Malina and S. Bowyer, pp. 397-408. Pergamon Press, New York. [3] Wu H. H. and Broadfoot A. L. (1977) *JGR*, 82, 759.